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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,070	08/30/2000	Scott Andrew Cummings	108339-09030	1144

32294 7590 03/26/2004

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER

BLOUNT, STEVEN

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,070

Applicant(s)

CUMMINGS, SCOTT ANDREW

Examiner

Steven Blount

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, line 2, classifying packets that travel through the media access controller is claimed; however, it is already mentioned in claim 1 line 9.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 6, 29 – 30, and 38 - 39 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,546,017 to Khaunte.

With regard to claim 1, Khaunte teaches MAC 204 (see figure 2); CPU 250; and what may be considered to be a Network functions module 202/282/250 which perform the classification and flow management procedures mentioned in col 4 lines 35 – 45 and col 13 lines 55+ to col 14 lines 4+. See also col 16 lines 50+ where it is noted that these processes may be carried out in a variety of locations, including a network interface card. While Khaunte does not explicitly say that the these functions are carried out in a “network functions module”, since it is mentioned in col 16 lines 50+ that these

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functions can be carried out in a variety of locations including in a NIC, or running in an operating system, the examiner believes that it would be obvious to one of ordinary skill in the art to recognize that any (or any combination) of members 202/282/250 would qualify as such.

With regard to the following claims (hereinafter denoted as "CI"), see the following: CI 2: see col 4 lines 39+ (scheduling, classification, and essentially traffic policing taught); CI 3: again, see col 4 lines 39+; CI 4: associating Khaunte with a QOS is mentioned in col 13 lines 45+; CI 5 – 6: see col 12 lines 39+ (DOCSIS).

With regard to claims 29 - 30, see the arrows between (204 and 284) and (202 and 282) in figure 2, and also the description of the flow and classification operations discussed above; with regard to claims 38 – 39, see col 13, lines 55+ of Khaunte.

4. Claims 7, 8, 11 – 13, and 16 - 18 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,546,017 to Khaunte as applied above, and further in view of U.S. patent 6678248 to Haddock et al and U.S. patent 6,243,360 to Basilico.

With regard to claim 7, Khaunte teaches the invention as described with respect to claim 1 above, but does not teach upstream/downstream flow modules in connection with a bridging and routing module, or a CAM memory in communication with the bridging and routing module.

Haddock et al teaches an apparatus for allocating bandwidth (among other things) which can be used to improve quality of service (see abstract, lines 4+) wherein there are upstream flow modules (input switch ports – see col 6 lines 34+; and see also the comparison engine 155), downstream flow modules (dequeuing block described in

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col 5 lines 3+, wherein it would be obvious to have "output switch ports" in view of the previously mentioned input switch ports); and the bridging and routing module member 115 (filtering/forwarding engine 115, see col 4 lines 29+). While Khaunte/Haddock et al teach the invention above, including having a buffer manager 165 in communication with the bridging and routing module member, it is not stated in Haddock et al that the buffer manager (or packet classification unit 150) is of a CAM variety.

Basilico teaches a CAM (see figure 4) in a destination address locator (see col 5 lines 6+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Khaunte with upstream/downstream flow modules, and a bridging and routing module, in light of the teachings of Haddock et al, and to have further provided the memory unit 165 of Haddock et al to be of a CAM variety, in light of Basilico, in order to provide for a fast lookup time.

With regard to claim 11, see col 13 lines 58+ of Khaunte. CI 12: see the rejection of claim 11 above and also figure 1B of Haddock; CI 13: note the use of Docsis above; CI 16 - 18: each of the elements claimed is discussed above (see also the use of scheduler 170).

5. Claims 9 – 10 and 14 - 15 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,546,017 to Khaunte as applied above, and further in view of U.S. patent 6678248 to Haddock et al and U.S. patent 6,243,360 to Basilico and U.S. patent 6,011,775 to Bonomi et al.

With regard to claims 9 - 10, Khaunte/Haddock et al/Basilico teach the invention

as described above, but do not teach the use of a scalable leaky bucket algorithm to support a quality of service function. This is taught, in a similar environment, in Bonomi et al. See col 4 lines 25+.

CI 14: see the Dequeue member 162 in Haddock et al and also note the prioritization as well; CI 15: note the bins in col 3 lines 45+;

6. Claims 19, 20, and 26 - 28 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,678,248 to Haddock et al.

With regard to claim 19, note the flow modules 155, 170, 150, and 162 discussed above, bridging/routing module 145 discussed above, and queues/enqueues 161 and 162, and that while these members (155, 170, 150, and 162) may not specifically be labeled as "flow modules", since they affect the flow of the system, it would be obvious to one of ordinary skill in the art that they could be considered as such. With regard to claim 20, see the rejections above which discuss upstream and downstream flow modules. With regard to claim 26, note the rejections above, and member 161 can be considered to be a "bin module"; With regard to claims 27 - 28, see the rejections above.

7. Claims 21 - 25 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,678,248 to Haddock et al as applied above, and further in view of U.S. patent 6011775 to Bonomi et al.

With respect to claim 21, Haddock et al teaches the invention as described with respect to 19, but does not teach the use of sorting bins or the use of a token. These are taught in Bonomi et al. See the discussion of tokens in col 2 lines 50+, and the use

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of bins as discussed in col 3 lines 15+. With respect to claims 22 – 23, see the rejections above. With respect to claim 24, the examiner takes Official Notice that the use of timer in this type of situation is well known in the art, and that reducing jitter is taught in Bonomi; with respect to claim 25, prioritization is taught in Haddock and Bonomi et al.

8. Claims 31 - 37 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,546,017 to Khaunte as applied above, and further in view of U.S. patent 6011775 to Bonomi et al.

With regard to claim 31, Khaunte teaches the invention as described above, but does not teach implementing the flow control using a modified leaky bucket implementation. This is taught in Bonomi et al as described above. With regard to claims 32 – 37, each of these claim limitations is discussed above.

9. Steven Blount may be reached at 703-305-0319 Monday through Friday between the hours of 9:00 and 5:30.

SB

SB

3/19/04

AP Patel
AP Patel
Primary Examiner